



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,904	07/17/2003	Larry G. Willemsen	KSR-11302/08	2130
25006	7590	03/07/2006	EXAMINER	
GIFFORD, KRASS, GROH, SPRINKLE & CITKOWSKI, P.C			LUONG, VINH	
PO BOX 7021			ART UNIT	
TROY, MI 48007-7021			PAPER NUMBER	
			3682	

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/621,904

Applicant(s)

WILLEMSSEN ET AL.

Examiner

Vinh T. Luong

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 20-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-19 and 23-32 is/are rejected.
- 7) ☒ Claim(s) 13 and 33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


Vinh T. Luong
Primary Examiner

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/20/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Attachments 1 and 2.

1. The Amendment filed on December 20, 2005 has been entered.
2. The drawings were received on December 20, 2005. The Examiner accepts these drawings.
3. Claims 20-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on January 18, 2005.
4. This application contains claims 20-22 drawn to an invention nonelected with traverse in Paper filed on January 18, 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
5. Claims 9, 19, and 30 are objected to because of the following informalities: no antecedent basis is seen for the term, e.g., “said housing rear wall” in claims 9, 19, and 30. Appropriate correction is required.
6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
7. Claims 9, 19, and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear whether a confusing variety of terms, such as, “a friction wall” and “an arcuate friction wall” in claims 9/1, 19/14, and claim 30/23 refer to the same or different things. See double inclusion in MPEP 2173.05(o) and 608.01(o).

8. Claims 1-5, 7-8, 14-17, and 9 and 19, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Heinrich (EP 0 748 713 A2 cited by Applicant on December 20, 2005).

Regarding claim 1, Heinrich teaches an electronically controlled pedal assembly with hysteresis comprising:

a housing 2 having a front wall (see Attachment 1) and an arcuate friction wall 2 extending from an edge of said front wall (Att. 1) wherein said friction wall 2 has a radius of curvature centered on a pedal arm pivot point 7;

a pedal arm having an upper arm 6 and a lower arm 4 and is rotatably supported at said pedal arm pivot point 7 that is between said upper pedal arm 6 and said lower pedal arm 4 by a mounting means 7 operatively connected to said housing 2;

a hysteresis generating means 10 pivotally *connected* to said upper pedal arm 6 (by a cam surface 10a as seen in Fig. 1); and

a spring 11 positioned between said housing 2 and said hysteresis generating means 10, wherein said spring 11 biases said hysteresis generating means 10 against said housing 2, such that depression of said pedal arm 6, 4 compresses said spring 11 while increasing a frictional hysteresis force between said arcuate friction wall 2 and said hysteresis generating means 10 that is translated back through said pedal arm 6, 4, and release of said pedal arm 6, 4 reduces the frictional hysteresis force. See English abstract attached.

Claim 1 and other claims below are “fully met” by Heinrich because Applicant’s claims do not specifically require, e.g., the hysteresis generating means be pivoted by a pivot pin at an outermost end of the upper pedal arm. Therefore, Heinrich’s hysteresis generating means 10,

which is pivoted about the pivot 10a on the outer surface of the upper pedal arm 6, “reads on” Applicant’s claimed hysteresis generating means. It is well settled that anticipation law requires distinction be made between invention described or taught and invention claimed. It does not require that the reference “teach” what subject patent application teaches, it is only necessary that the claim under attack, as construed by the Court, “*read on*” something disclosed in the reference, *i.e.*, all limitations of the claim are found in reference, or are “*fully met*” by it. *Kalman v. Kimberly Clark Corp.*, 218 USPQ 781, 789 (Fed. Cir. 1983).

Regarding claim 2, said hysteresis generating means 10 is a friction lever 10 pivotally *connected* (by the cam surface 10a) to an outer end (Att. 1) of said upper pedal arm 6 at a friction lever pivot point 10a.

Regarding claim 3, Heinrich teaches an electronically controlled pedal assembly with hysteresis comprising:

a housing 2 having a front wall (Att. 1) and an arcuate friction wall 2 extending from an edge of said front wall (Att. 1) wherein said friction wall 2 has a radius of curvature centered on a pedal arm pivot point 7;

a pedal arm having an upper arm 6 and a lower arm 4 and is rotatably supported at said pedal arm pivot point 7 that is between said upper pedal arm 6 and said lower pedal arm 4 by a mounting means 7 *operatively* connected to said housing 2;

a hysteresis generating means 10 pivotally *connected* to said upper pedal arm 6 (by a cam surface 10a as seen in Fig. 1) having a friction lever 10 pivotally *connected* to an outer end of said upper pedal arm 6 at a friction lever pivot point 10a, wherein said friction lever 10 includes an integrally formed main member (Att. 1), a lower member 10a extending radially

Art Unit: 3682

from a lower end of said main member (Att. 1) and an upper arcuate member 12 extending radially from an upper end of said main member (Att. 1), and an upper surface of said upper arcuate member 12 is abraded to frictionally engage a surface of said housing arcuate friction wall (Att. 1); and

a spring 11 positioned between said housing 2 and said hysteresis generating means 10, wherein said spring 11 biases said hysteresis generating means 10 against said housing 2, such that depression of said pedal arm 6, 4 compresses said spring 11 while increasing frictional hysteresis force between said arcuate friction wall 2 and said hysteresis generating means 10 that is translated back through said pedal arm 6, 4, and release of said pedal arm 6, 4 reduces the frictional hysteresis force.

Claim 3 is “fully met” by Heinrich because claim 3 does not require, e.g., the friction lever pivotally connected by a pivot pin at an outermost end of the upper pedal arm. Therefore, Heinrich’s hysteresis generating means 10, which is pivoted about the pivot 10a on the outer surface of the upper pedal arm 6, “reads on” Applicant’s claimed hysteresis generating means. *Kalman v. Kimberly Clark Corp., supra*. Note that the term “operatively connected” does not require the mounting means and the housing be affixed to one another in manner that results in two components forming unitary structure, since general descriptive term “operatively connected” means only that components must be connected in a manner to perform designated function. *Innova/Pure Water Inc. v. Safari Water Filtration Systems Inc.*, 72 USPQ2d 1001 (Fed. Cir. 2004).

Regarding claim 4, said friction lever upper arcuate member 12 is canted toward said housing arcuate friction wall 2 to increase the frictional hysteresis force when said pedal arm 6, 4 is depressed and reduce the frictional hysteresis force when said pedal arm 6, 4 is released.

Regarding claim 5, said friction lever 18 includes an *integrally* formed main member 110 and an upper arcuate member 106 extending *forwardly* from an upper end (Att. 1) of said main member 110, and an upper surface 106 of said friction lever upper member 106 is abraded to frictionally engage said housing arcuate friction wall 108. It is well settled that the term “integral” is not restricted to a one-piece article. The term “integral” is sufficiently broad to embrace constructions united by such means as fastening and welding. See *In re Hotte*, 177 USPQ 326 (CCPA); *In re Clark*, 102 USPQ 241 (CCPA); *In re Dike*, 157 USPQ 581 (CCPA); *In re Kohno*, 157 USPQ 275 (CCPA); and *In re Morris*, 43 USPQ2d 1753, 1757 (CAFC 1997).

Regarding claim 7, said pedal arm 6, 4 includes a disk portion (Att. 1), and said lower pedal arm 4 extends from a lower edge (Att. 1) of said disk portion (Att. 1) and said upper pedal arm 6 (Att. 1) extends from an upper edge (Att. 1) of said disk portion (Att. 1).

Regarding claim 8, said mounting means is a post and bushing 7 (Fig. 1).

Regarding claim 9, said hysteresis generating means includes:

a friction wall 2 extending radially from said housing front wall (Att. 1), wherein said friction wall 2 includes an arcuate frictional surface (Att. 1), and is positioned between a housing rear wall (Att. 1) and said pedal arm 6, 4; and

a friction lever 10 having a first portion 10a pivotally mounted to said pedal arm 6, 4 (by the cam surface at 10a) and a second portion 12 in frictional contact with said friction wall 2 to increase the frictional hysteresis force during actuation of said pedal arm 6, 4.

Regarding claim 14, Heinrich teaches an electronically controlled pedal assembly with hysteresis comprising:

a housing 2 (Att. 1) having a front wall (Att. 1) and an arcuate friction wall 2 extending from an edge of said front wall (Att. 1) wherein said friction wall 2 has a radius of curvature centered on a pedal arm pivot point 7;

a pedal arm rotatably supported at said pedal arm pivot point 7 by a mounting means 7 operatively connected to said housing 2, wherein said pedal arm includes a disk portion (Att. 1), a lower pedal arm 4 extending from a lower edge (Att. 1) of said disk portion (Att. 1) and an upper arm 6 (Att. 1) extending from an upper edge (Att. 1) of said disk portion (Att. 1) and said pedal arm pivot point 7 is between said upper pedal arm (Att. 1) and said lower pedal arm (Att. 1);

a hysteresis generating means 10 pivotally mounted to said upper pedal arm (by the cam surface 10a) *for pivotal movement relative to said upper arm 6*, wherein said hysteresis generating means 10 is a friction lever 10 pivotally connected (by the cam surface 10a) to an outer end (Att. 1) of said upper pedal arm 6 at a friction lever pivot point 10a; and

a spring 11 positioned between said housing 2 and said hysteresis generating means 10, wherein said spring 11 biases said hysteresis generating means 10 against said housing 2, such that depression of said pedal arm 6, 4 compresses said spring 11 while increasing a frictional hysteresis force between said arcuate friction wall 2 and said hysteresis generating means 11 that is translated back through said pedal arm 6, 4, and release of said pedal arm 6, 4 reduces the frictional hysteresis force.

Regarding claim 15, see regarding claims 3 and 14 above.

Regarding claim 16, see regarding claim 4 above.

Regarding claims 17 and 19, see regarding claims 5 and 9 above.

9. Claims 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinrich in view of applicant's own admission that Groups I-IV are not patentably distinct (see response filed January 18, 2005, p. 2, lines 12-13).

Regarding claims 6 and 18, Heinrich's hysteresis generating means includes a friction lever 10 pivotally connected (by a cam surface 10a) to said upper pedal arm 6 at a friction lever pivot point 10a; a push arm 12 pivotally *connected* to said pedal arm 6, 4 at a push arm pivot point (Att. 1) that is radially *outward* from said friction lever pivot point 10a, wherein said push arm 12 is in contact with said friction lever 10, such that said spring 11 forces said push arm 12 against said friction lever 10 to increase the frictional hysteresis force.

To modify the push arm of Heinrich as claimed would have been obvious to one of ordinary skill in the art at the time the invention was made as evidenced by applicant's admission in response filed January 18, 2005.

10. Claims 10-12, 23-27 and 29, 31, and 32, and claim 30, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinrich in view of DeForest (US Patent No. 6,860,170 B2).

Regarding claim 10, Heinrich teaches the invention substantially as claimed. However, Heinrich does not teach the cap, the alignment post, etc.

DeForest teaches a cap 22 mounted to a housing 20 (Fig. 5); an alignment post (unnumbered in Fig. 5. See Att. 2) extending radially from a face portion of the cap 22, wherein the alignment post (Att. 2) aligns the cap 22 with the pedal arm pivot point 52; a plurality of

Art Unit: 3682

mounting posts 62 (Fig. 5) extending radially from the cap face portion; an induction sensor 16 for sensing for sensing the position of the pedal arm 14 *operatively* mounted on the cap alignment post (Att. 2) and the cap mounting posts 62, wherein the induction sensor 16 inherently includes first and second rotors and a sensor suspended between the first and second sensors. Note that the sensor that includes first and second rotors and the stator is conventional and notoriously well known in the art. See, *e.g.*, Applicant's cited reference US Patent No. 6,384,598 issued to Hobein et al.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the cap, the alignment post, the mounting posts, and the sensor, etc. for the pedal assembly of Heinrich in order to rigidly secure Heinrich pedal assembly to the support structure of the vehicle as taught or suggested by DeForest in col. 4, lines 36-65 and/or to provide a high quality, reliable, low cost universal assembly as taught or suggested by DeForest in col. 2, line 4 through col. 3, line 16.

Regarding claim 11, DeForest's cap alignment post (Att. 2) is *operatively* supported on the pedal arm mounting means 52.

Regarding claim 12, DeForest's cap 22 includes at least one slot (Fig. 5. See Att. 2) for securing the cap assembly 22 to the housing 20 in a predetermined position (by screws 32).

Regarding claim 23, see regarding claim 10 above.

Regarding claim 24, Heinrich's hysteresis generating means 10 is a friction lever 10 pivotally *connected* (by the cam surface 10a) to an outer end (Att. 1) of said upper pedal arm 6 at a friction lever pivot point 10a.

Regarding claim 25, Heinrich teaches the invention substantially as claimed (see regarding claim 3 above). However, Heinrich does not teach the cap, the alignment post, etc.

DeForest teaches a cap 22 mounted to a housing 20 (Fig. 5); an alignment post (unnumbered in Fig. 5. See Att. 2) extending radially from a face portion of the cap 22, wherein the alignment post (Att. 2) aligns the cap 22 with the pedal arm pivot point 52; a plurality of mounting posts 62 (Fig. 5) extending radially from the cap face portion; an induction sensor 16 for sensing for sensing the position of the pedal arm 14 *operatively* mounted on the cap alignment post (Att. 2) and the cap mounting posts 62, wherein the induction sensor 16 inherently includes first and second rotors and a sensor suspended between the first and second sensors. Note that the sensor that includes first and second rotors and the stator is conventional and notoriously well known in the art. See, *e.g.*, Applicant's cited reference US Patent No. 6,384,598 issued to Hobein et al.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the cap, the alignment post, the mounting posts, and the sensor, etc. for the pedal assembly of Heinrich in order to rigidly secure Heinrich pedal assembly to the support structure of the vehicle as taught or suggested by DeForest in col. 4, lines 36-65 and/or to provide a high quality, reliable, low cost universal assembly as taught or suggested by DeForest in col. 2, line 4 through col. 3, line 16.

Regarding claim 26, Heinrich's friction lever upper arcuate member 12 is canted toward said housing arcuate friction wall 2 to increase the frictional hysteresis force when said pedal arm 6, 4 is depressed and reduce the frictional hysteresis force when said pedal arm 6, 4 is released.

Regarding claim 27, Heinrich's friction lever 18 includes an *integrally* formed main member 110 and an upper arcuate member 106 extending *forwardly* from an upper end (Att. 1) of said main member 110, and an upper surface 106 of said friction lever upper member 106 is abraded to frictionally engage said housing arcuate friction wall 108. It is well settled that the term "integral" is not restricted to a one-piece article. The term "integral" is sufficiently broad to embrace constructions united by such means as fastening and welding. See *In re Hotte*; *In re Clark*; *In re Dike*; *In re Kohno*; and *In re Morris, supra*.

Regarding claim 29, Heinrich's mounting means is a post and bushing 7 (Fig. 1).

Regarding claim 30, Heinrich's hysteresis generating means includes:

a friction wall 2 extending radially from said housing front wall (Att. 1), wherein said friction wall 2 includes an arcuate frictional surface (Att. 1), and is positioned between a housing rear wall (Att. 1) and said pedal arm 6, 4; and

a friction lever 10 having a first portion 10a pivotally mounted to said pedal arm 6, 4 (by the cam surface at 10a) and a second portion 12 in frictional contact with said friction wall 2 to increase the frictional hysteresis force during actuation of said pedal arm 6, 4.

Regarding claims 31 and 32, see regarding claims 11 and 12 above.

10. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heinrich in view of DeForest as applied to claim 23 above, and further in view of applicant's own admission that Groups I-IV are not patentably distinct (see response filed January 18, 2005, p. 2, lines 12-13).

Heinrich's hysteresis generating means includes a friction lever 10 pivotally connected (by a cam surface 10a) to said upper pedal arm 6 at a friction lever pivot point 10a; a push arm 12 pivotally *connected* to said pedal arm 6, 4 at a push arm pivot point (Att. 1) that is radially

outward from said friction lever pivot point 10a, wherein said push arm 12 is in contact with said friction lever 10, such that said spring 11 forces said push arm 12 against said friction lever 10 to increase the frictional hysteresis force.

To modify the push arm of Heinrich as modified by DeForest such that the push arm is radially *inward instead of outward* from the friction lever pivot point would have been obvious to one of ordinary skill in the art at the time the invention was made as evidenced by applicant's admission in response filed January 18, 2005.

11. Claims 13 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kazuhiro (hysteresis generating means 44).

14. Applicant's arguments filed December 20, 2005 have been fully considered but they are not persuasive.

The previous rejections based on DeForest, DeForest in view of Hobein et al., and DeForest in view of Applicant's own admission are withdrawn in view of Applicant's amendments. However, Applicant's amendments, such as, "pivotally connected" and/or "for pivotal movement relative to said upper pedal arm" in claims 1, 3, 14, 15, 23, and/or 25 and the submission of the Heinrich reference necessitated new grounds of rejections above. Applicant's

arguments with respect to claims 1-19 and 23-33 have been considered but are moot in view of the new ground(s) of rejection.

15. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on December 20, 2005 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

Art Unit: 3682

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinh T. Luong whose telephone number is 571-272-7109. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Luong

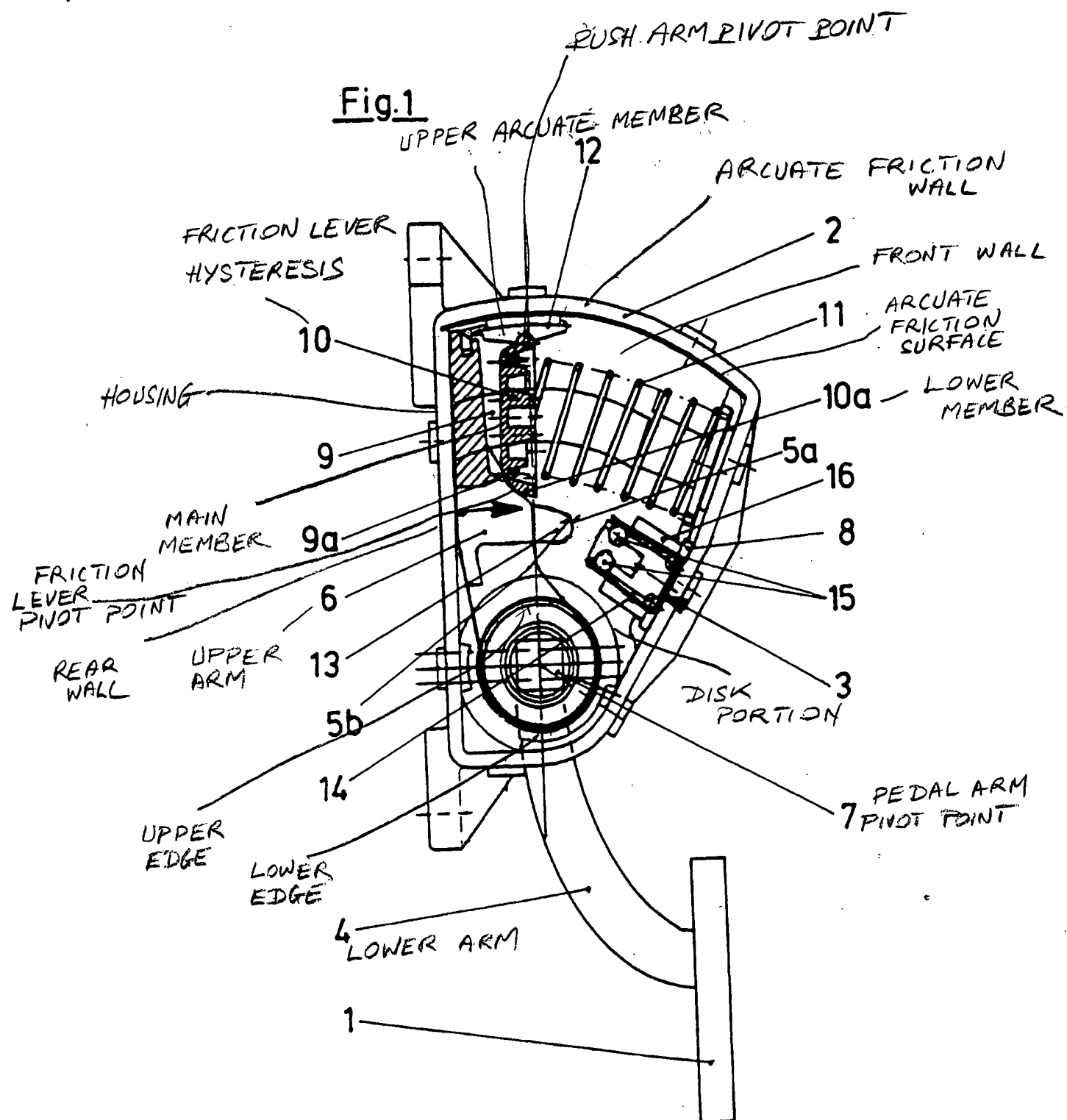
February 27, 2006



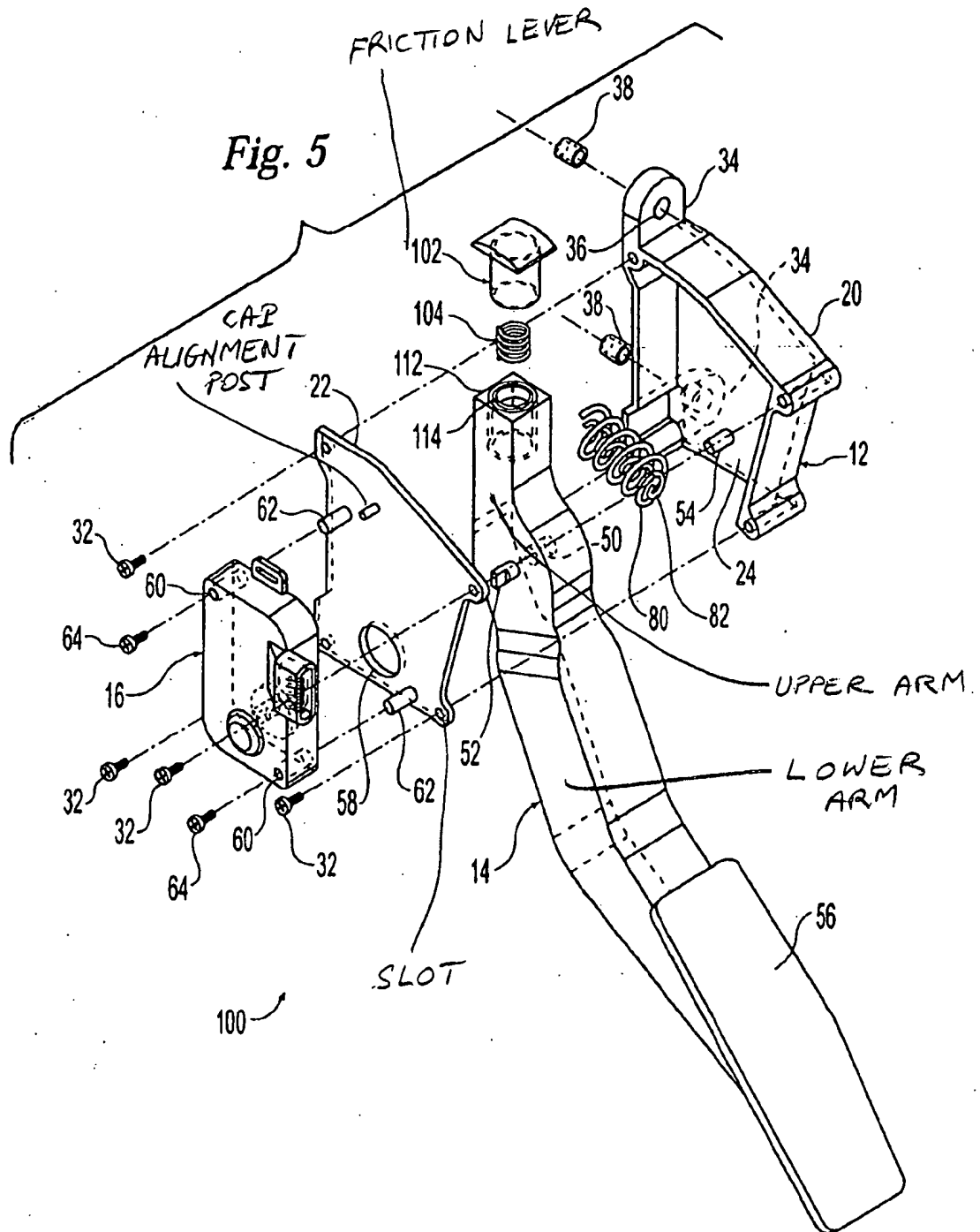
Vinh T. Luong
Primary Examiner

ATTACHMENT 1

Fig.1



ATTACHMENT 2



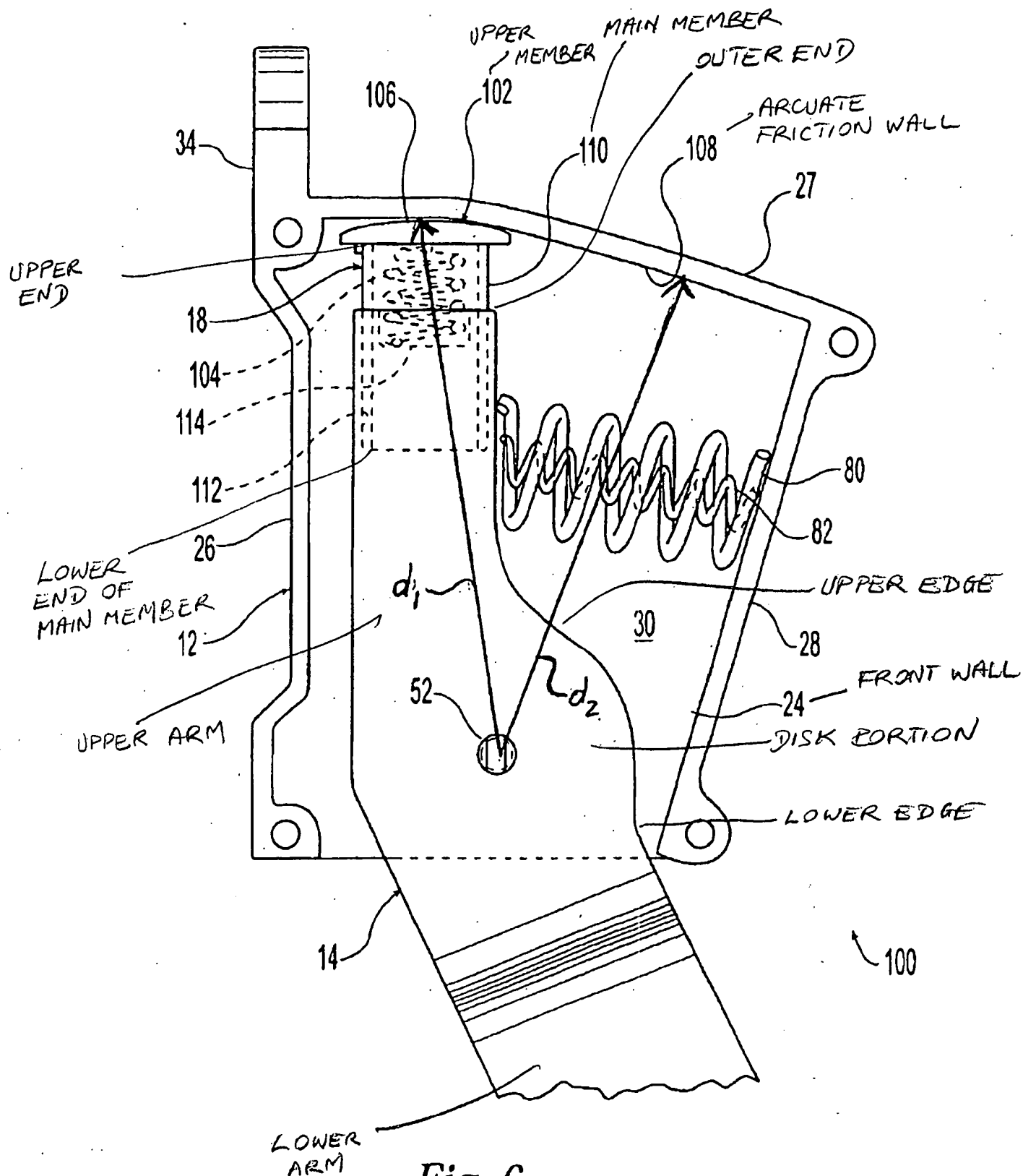


Fig. 6